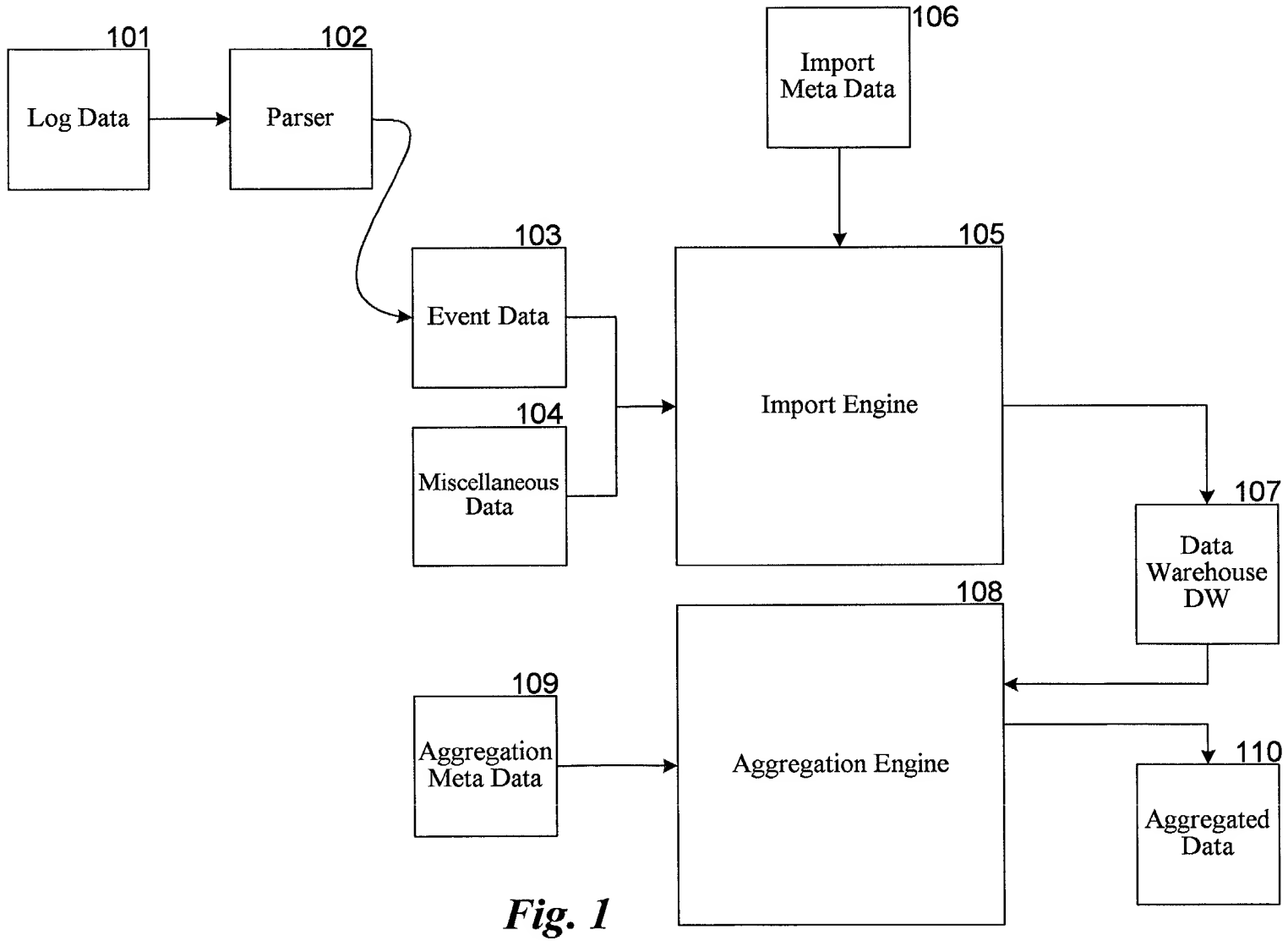
101
Log Data
102
Parser
106
Import Meta Data
103
Event Data
104
Miscellaneous Data
105
Import Engine
107
Data Warehouse DW
108
109
Aggregation Meta Data
Aggregation Engine
110
Aggregated Data

Fig. 1

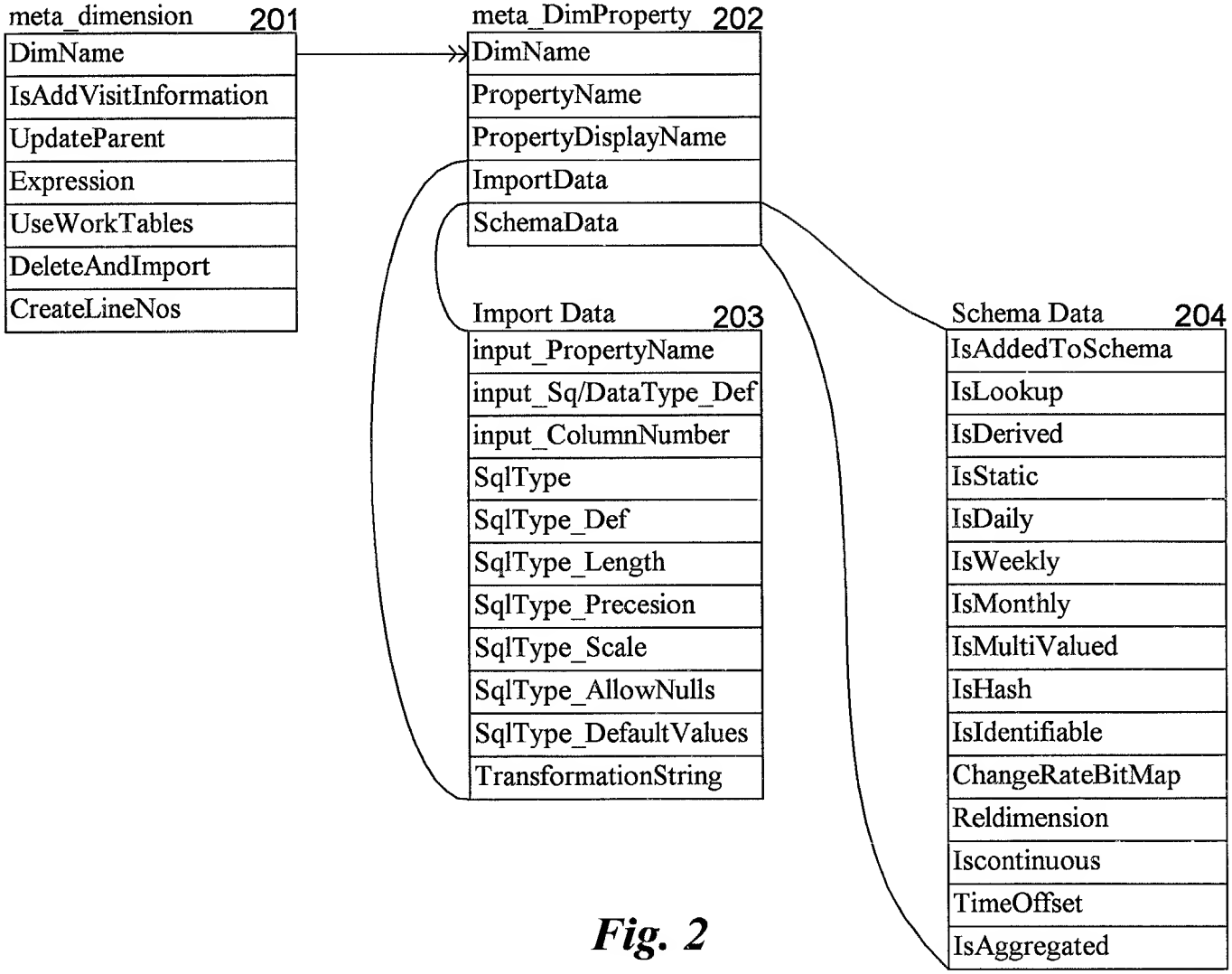
meta_dimension
201
DimName
IsAddVisitInformation
UpdateParent
Expression
UseWorkTables
DeleteAndImport
CreateLineNos
meta_DimProperty
202
DimName
PropertyName
PropertyDisplayName
ImportData
SchemaData
Import Data
203
input_PropertyName
input_Sq/DataType_Def
input_ColumnNumber
SqlType
SqlType_Def
SqlType_Length
SqlType_Precesion
SqlType_Scale
SqlType_AllowNulls
SqlType_DefaultValues
TransformationString
Schema Data
204
IsAddedToSchema
IsLookup
IsDerived
IsStatic
IsDaily
IsWeekly
IsMonthly
IsMultiValued
IsHash
IsIdentifiable
ChangeRateBitMap
Reldimension
Iscontinuous
TimeOffset
IsAggregated

Fig. 2

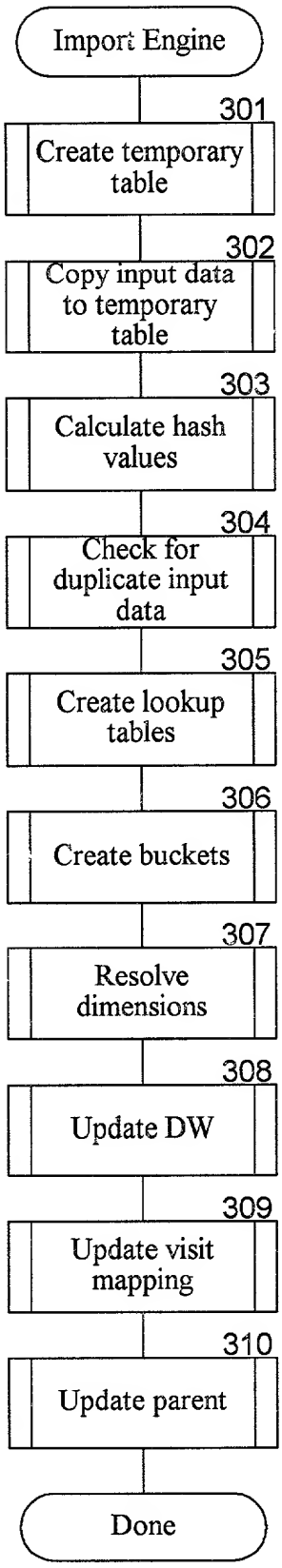

Fig. 3

D:\Data\Patents\2005\05853.pdf

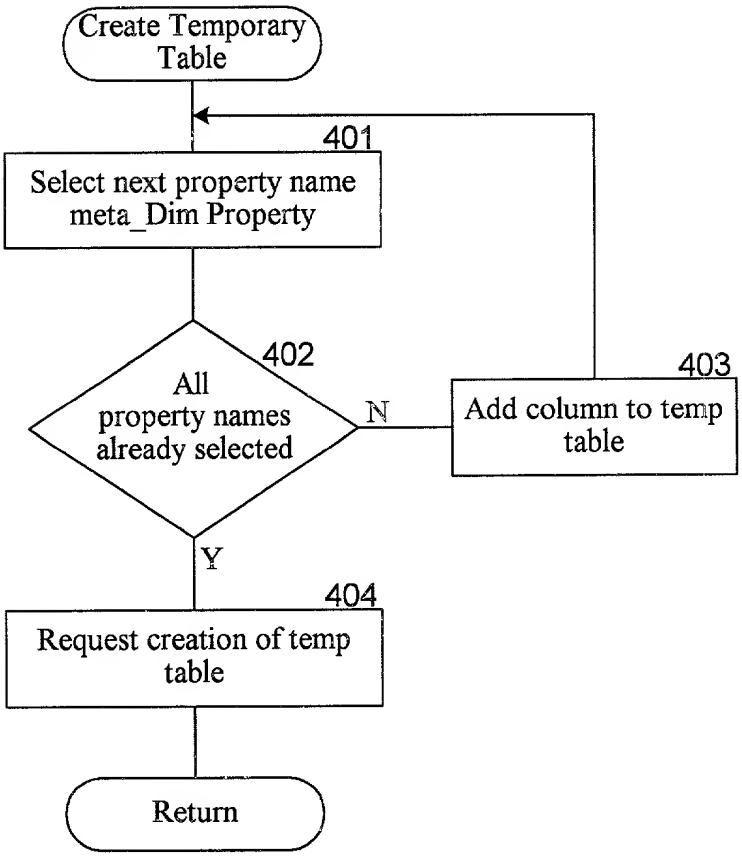
Create Temporary Table
401
Select next property name meta_Dim Property
402
All property names already selected
N
403
Add column to temp table
Y
404
Request creation of temp table
Return

Fig. 4

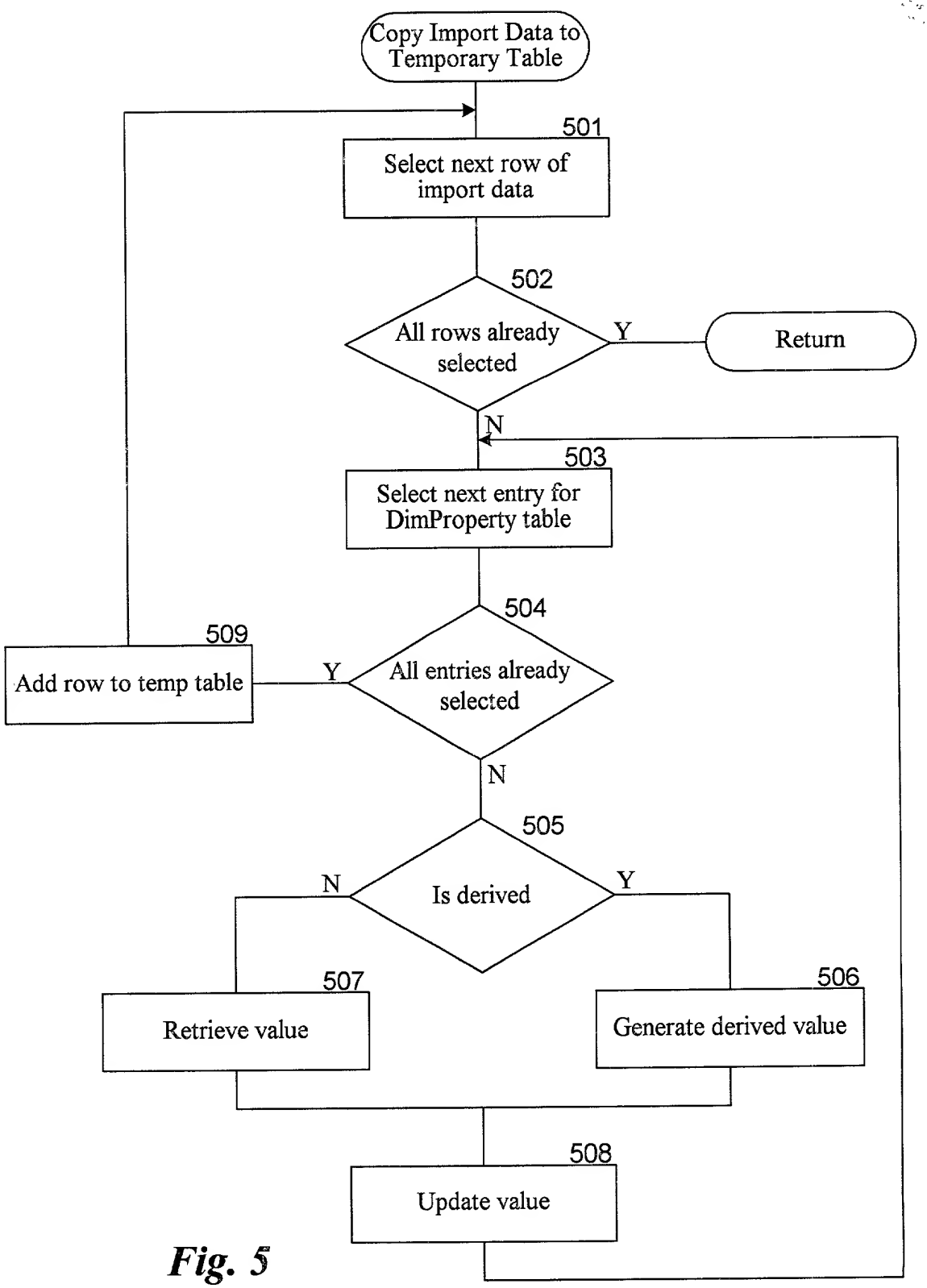
Copy Import Data to Temporary Table
501
Select next row of import data
502
All rows already selected
Y
Return
N
503
Select next entry for DimProperty table
504
All entries already selected
Y
509
Add row to temp table
N
505
Is derived
N
Y
507
Retrieve value
506
Generate derived value
508
Update value

Fig. 5

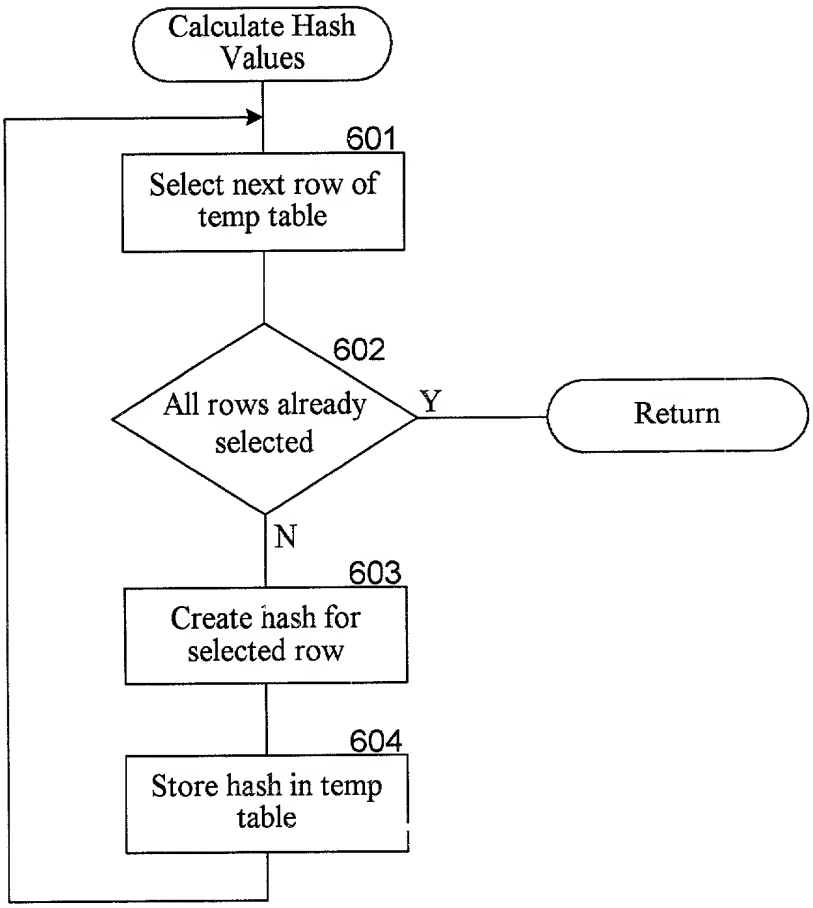
Calculate Hash Values
601
Select next row of temp table
602
All rows already selected
Y
Return
N
603
Create hash for selected row
604
Store hash in temp table

Fig. 6

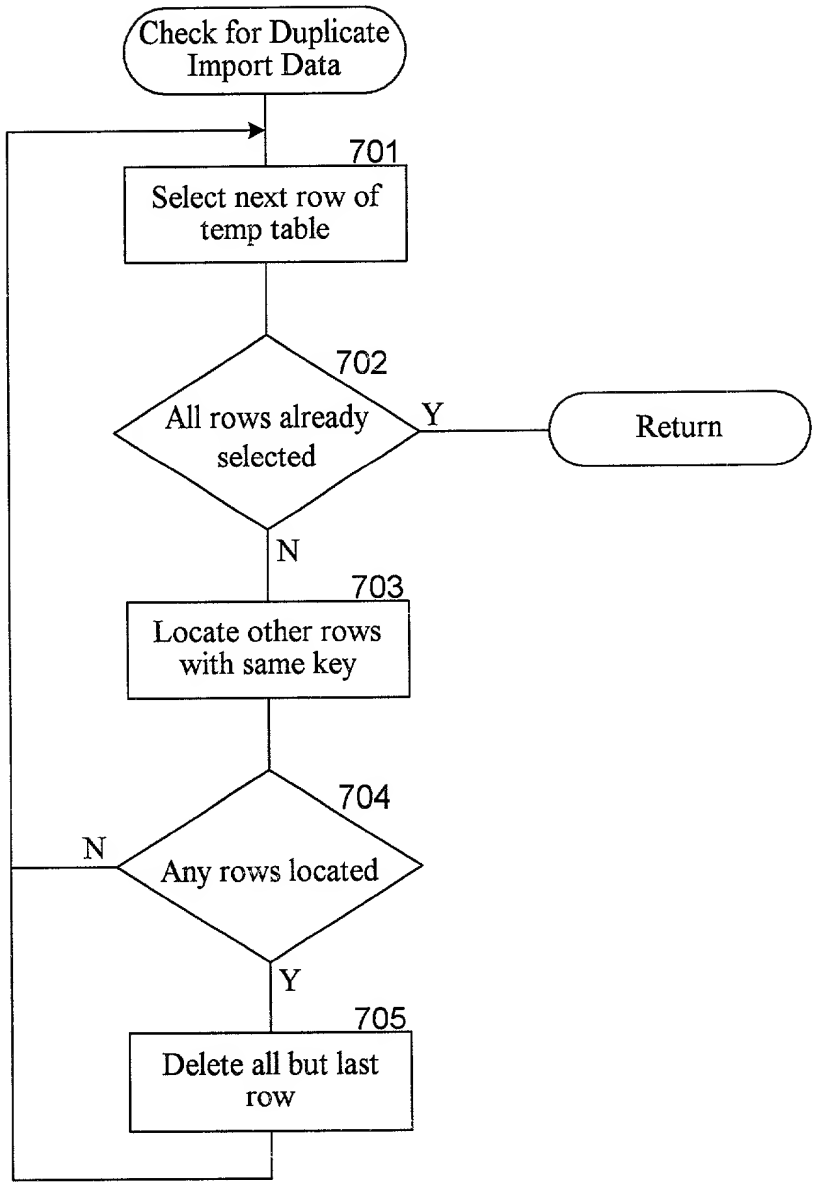
Check for Duplicate Import Data
701
Select next row of temp table
702
All rows already selected
Y
Return
N
703
Locate other rows with same key
704
N
Any rows located
Y
705
Delete all but last row

Fig. 7

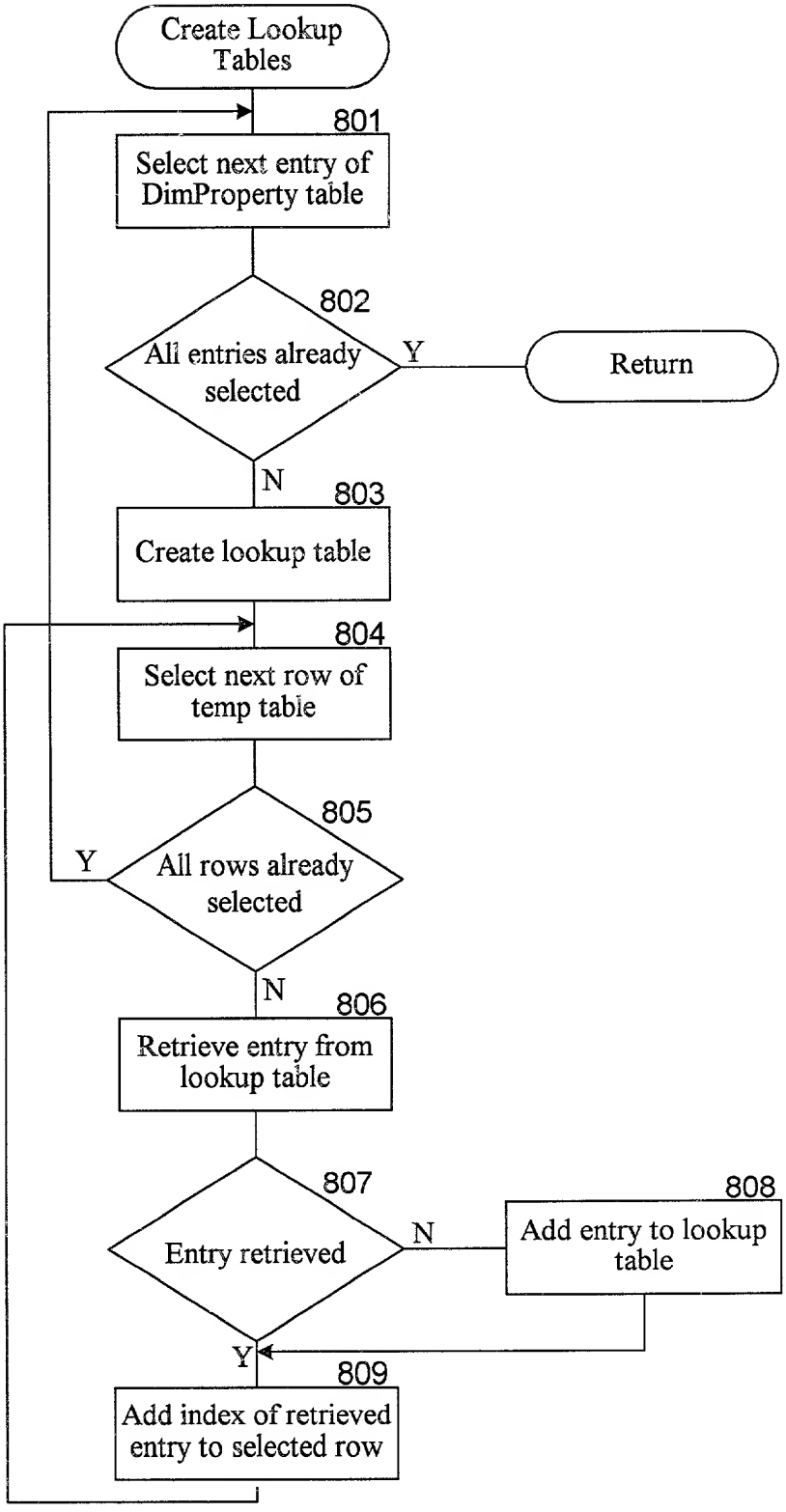
Create Lookup Tables
801
Select next entry of DimProperty table
802
All entries already selected
Y
Return
N
803
Create lookup table
804
Select next row of temp table
805
All rows already selected
Y
N
806
Retrieve entry from lookup table
807
Entry retrieved
N
808
Add entry to lookup table
Y
809
Add index of retrieved entry to selected row

Fig. 8

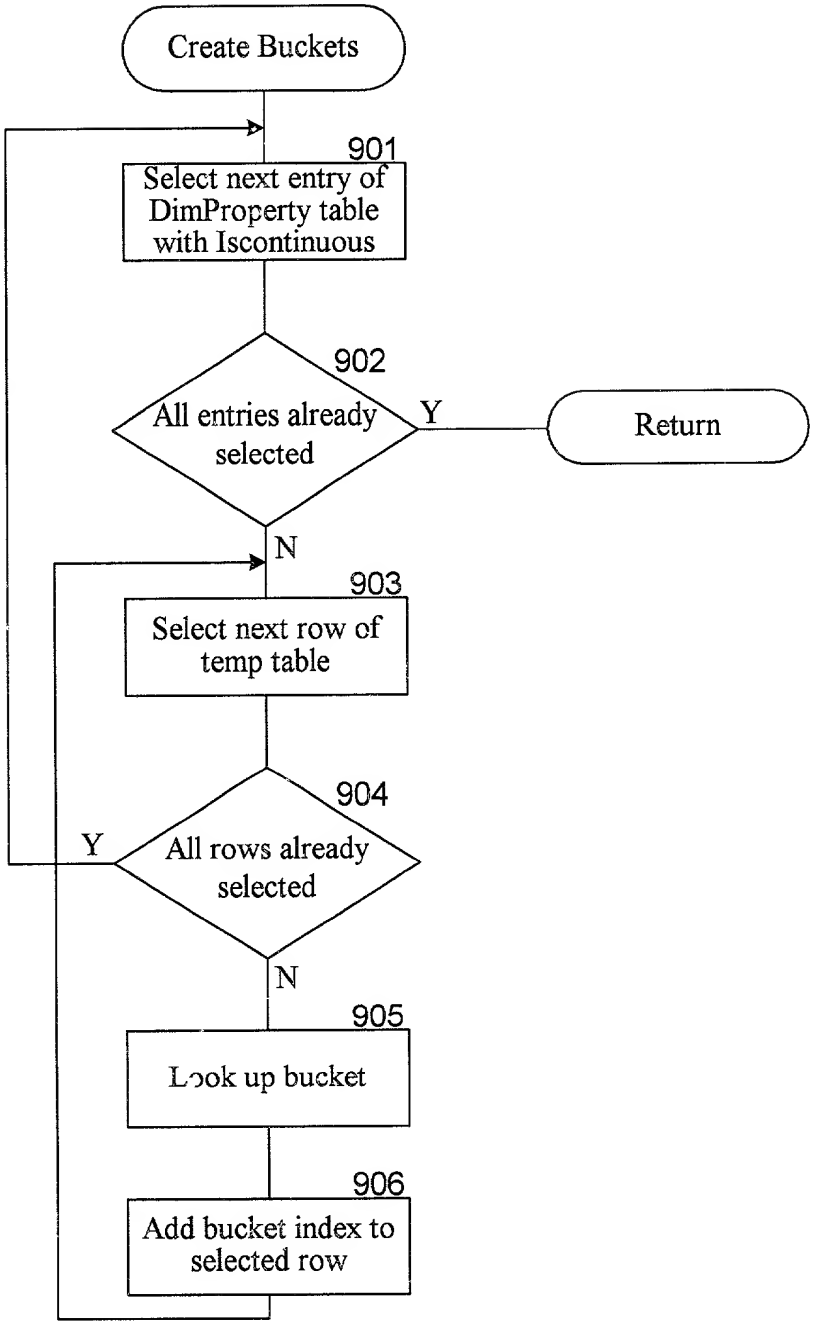
Create Buckets
901
Select next entry of DimProperty table with Iscontinuous
902
All entries already selected
Y
Return
N
903
Select next row of temp table
904
All rows already selected
Y
N
905
Look up bucket
906
Add bucket index to selected row

Fig. 9

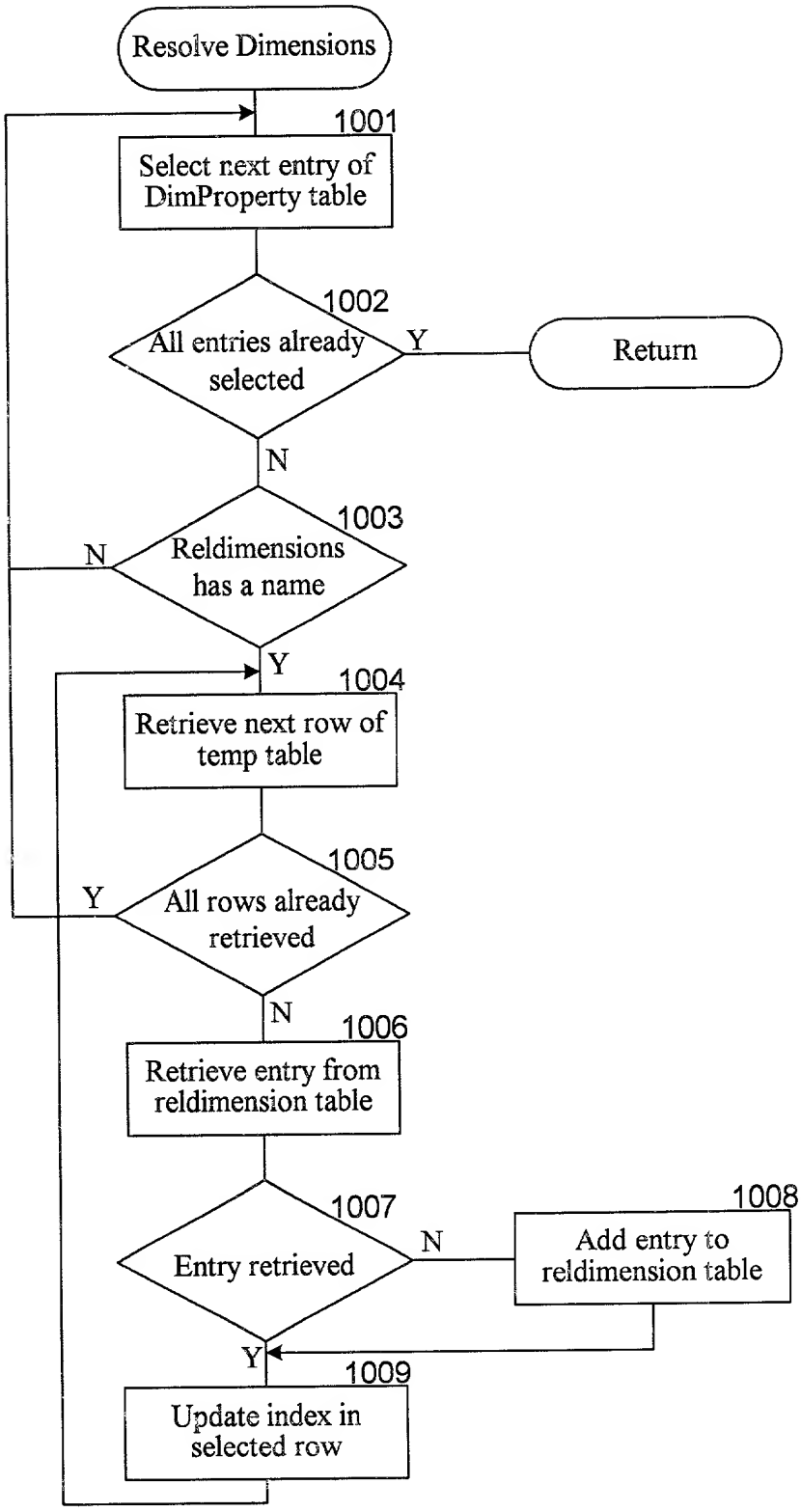
Resolve Dimensions
1001
Select next entry of DimProperty table
1002
All entries already selected
Y
Return
N
1003
Reldimensions has a name
N
Y
1004
Retrieve next row of temp table
1005
All rows already retrieved
Y
N
1006
Retrieve entry from reldimension table
1007
Entry retrieved
N
1008
Add entry to reldimension table
Y
1009
Update index in selected row

Fig. 10

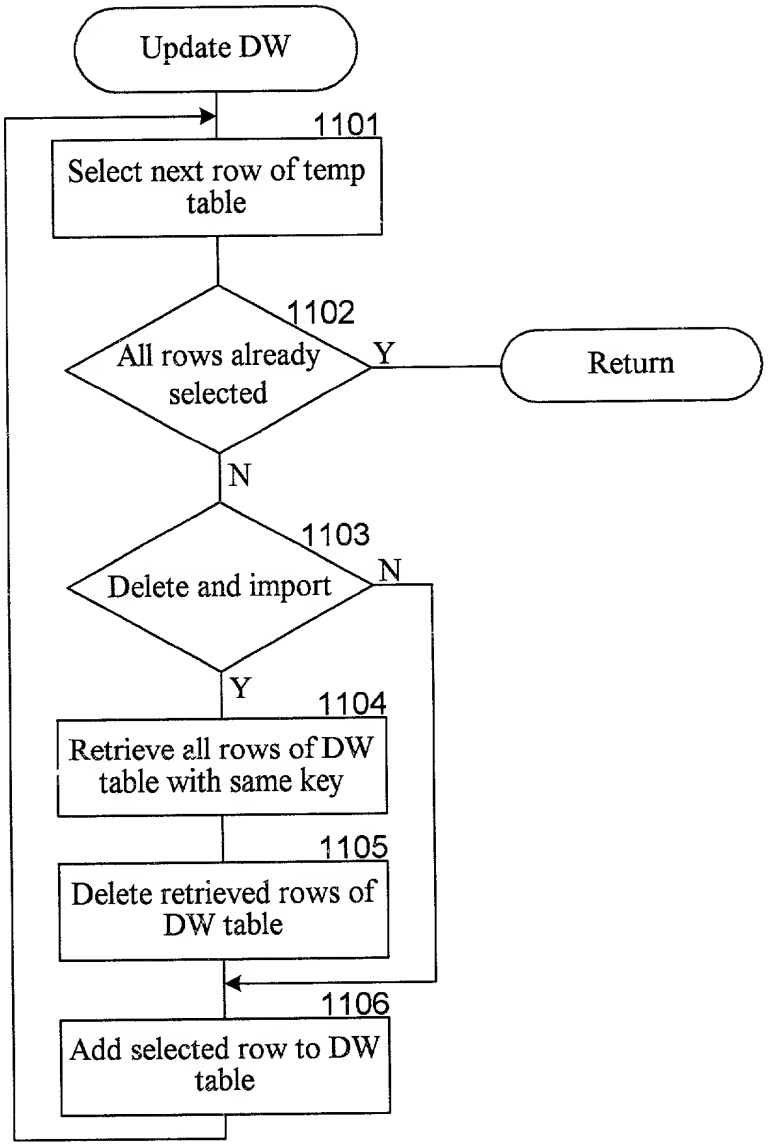
Update DW
1101
Select next row of temp table
1102
All rows already selected
Y
Return
N
1103
Delete and import
N
Y
1104
Retrieve all rows of DW table with same key
1105
Delete retrieved rows of DW table
1106
Add selected row to DW table

Fig. 11

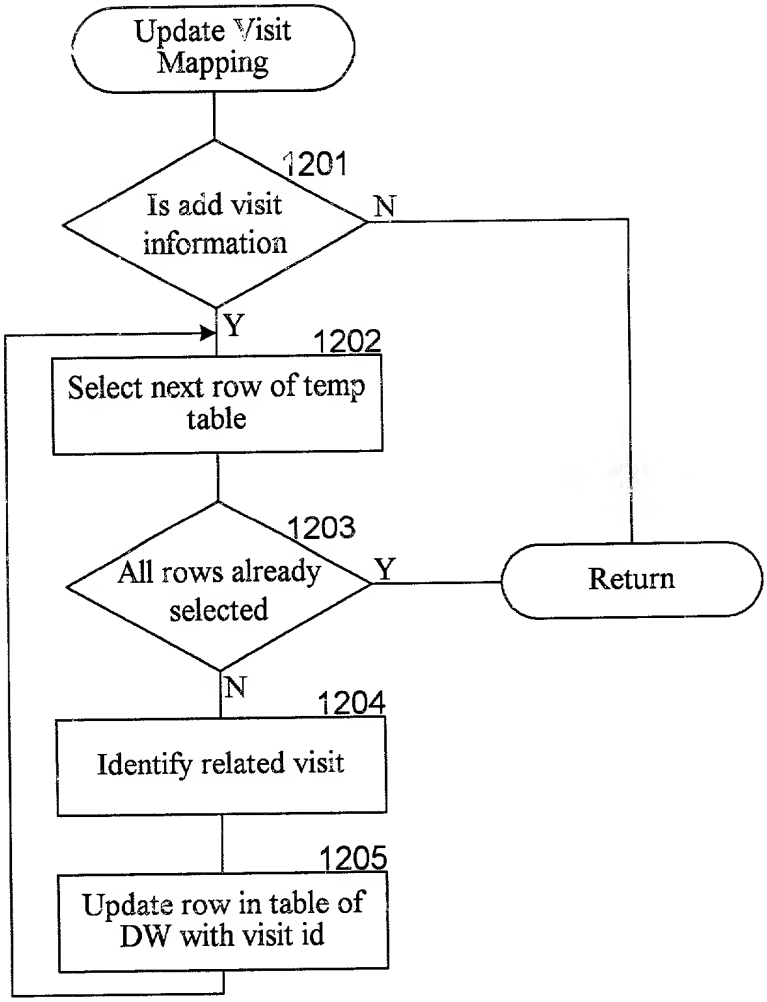
Update Visit Mapping
1201
Is add visit information
N
Y
1202
Select next row of temp table
1203
All rows already selected
Y
Return
N
1204
Identify related visit
1205
Update row in table of DW with visit id

Fig. 12

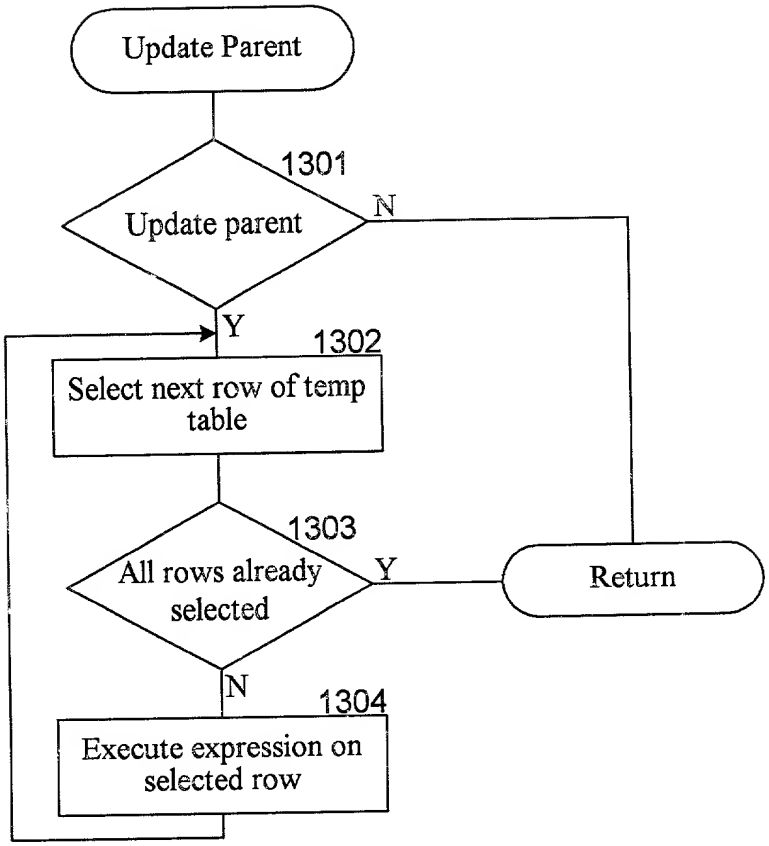
Update Parent
1301
Update parent
N
Y
1302
Select next row of temp table
1303
All rows already selected
Y
Return
N
1304
Execute expression on selected row

Fig. 13

Aggregation Table 1401

Aggregating Property	Measure 1	Measure 2		Measure N

Report Table 1402

Aggregating Property	Measure 1		Measure N

Fig. 14

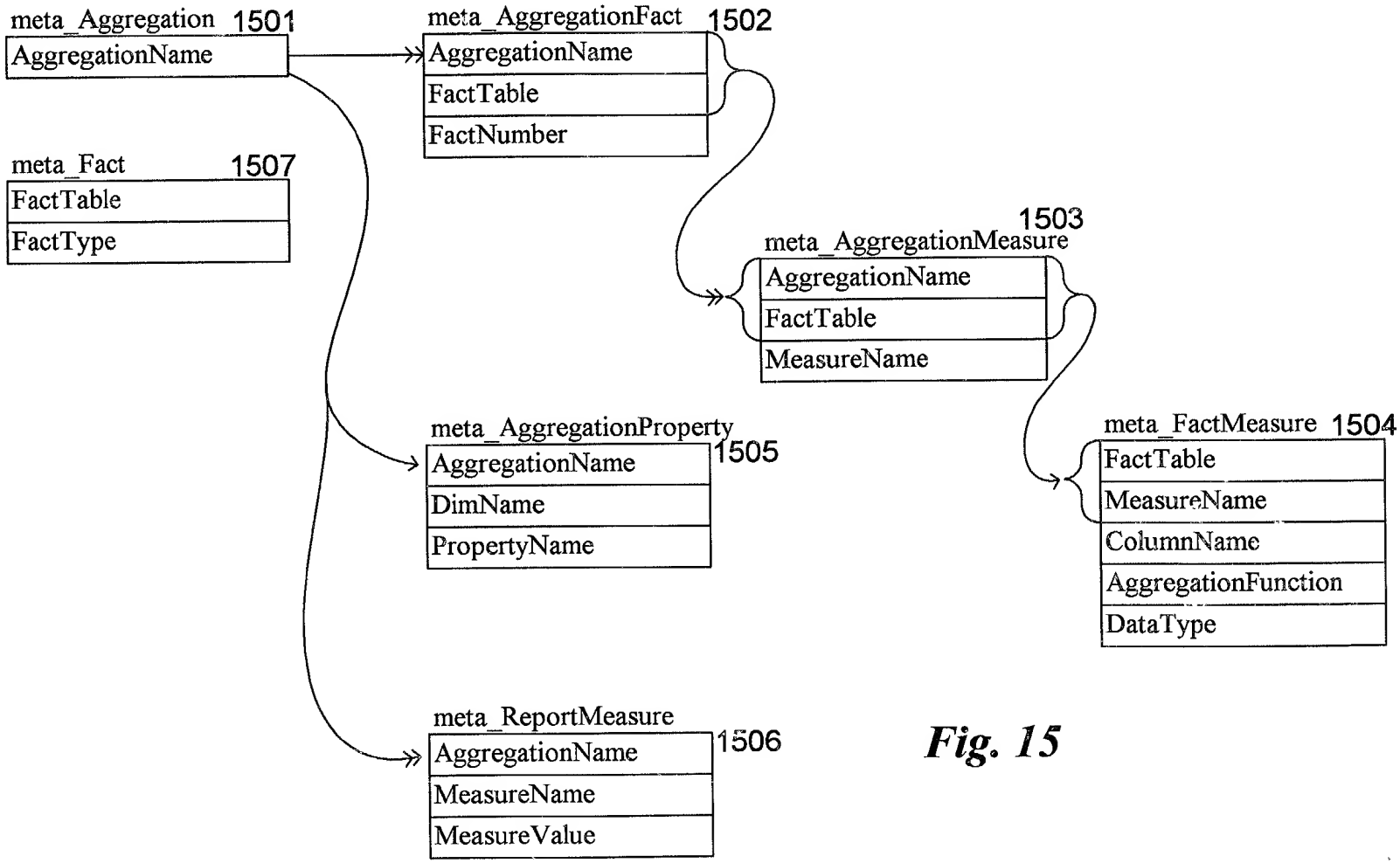
meta_Aggregation
1501
AggregationName
meta_AggregationFact
1502
AggregationName
FactTable
FactNumber
meta_Fact
1507
FactTable
FactType
1503
meta_AggregationMeasure
AggregationName
FactTable
MeasureName
meta_AggregationProperty
1505
AggregationName
DimName
PropertyName
meta_FactMeasure
1504
FactTable
MeasureName
ColumnName
AggregationFunction
DataType
meta_ReportMeasure
1506
AggregationName
MeasureName
MeasureValue

Fig. 15

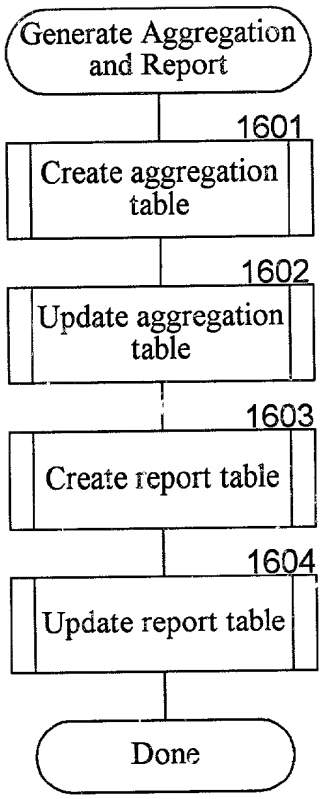
Generate Aggregation and Report
TableName Aggregation
1601
Create aggregation table
1602
Update aggregation table
1603
Create report table
1604
Update report table
Done

Fig. 16

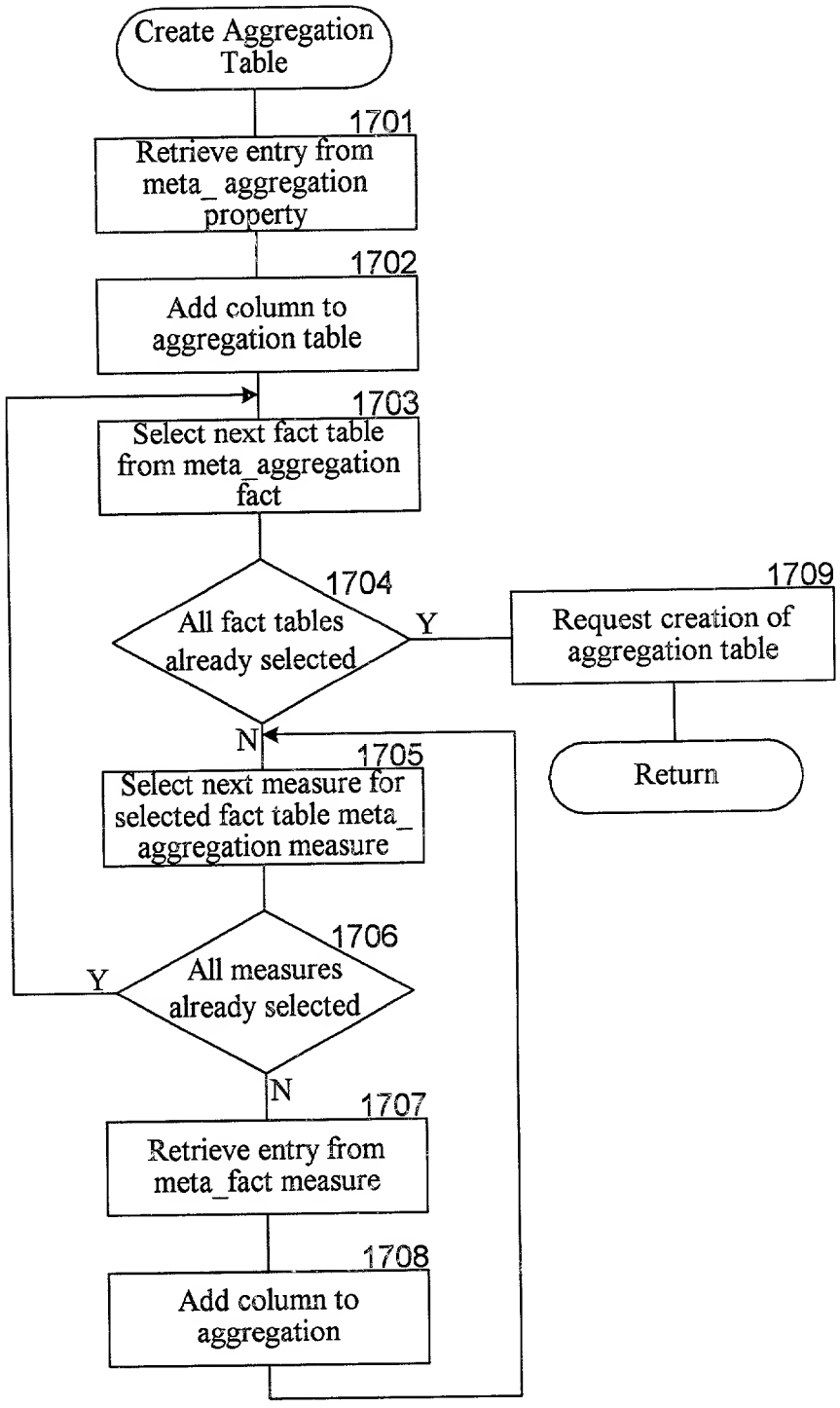
Create Aggregation Table
1701
Retrieve entry from meta_ aggregation property
1702
Add column to aggregation table
1703
Select next fact table from meta_aggregation fact
1704
All fact tables already selected
Y
1709
Request creation of aggregation table
Return
N
1705
Select next measure for selected fact table meta_ aggregation measure
1706
All measures already selected
Y
N
1707
Retrieve entry from meta_fact measure
1708
Add column to aggregation

Fig. 17

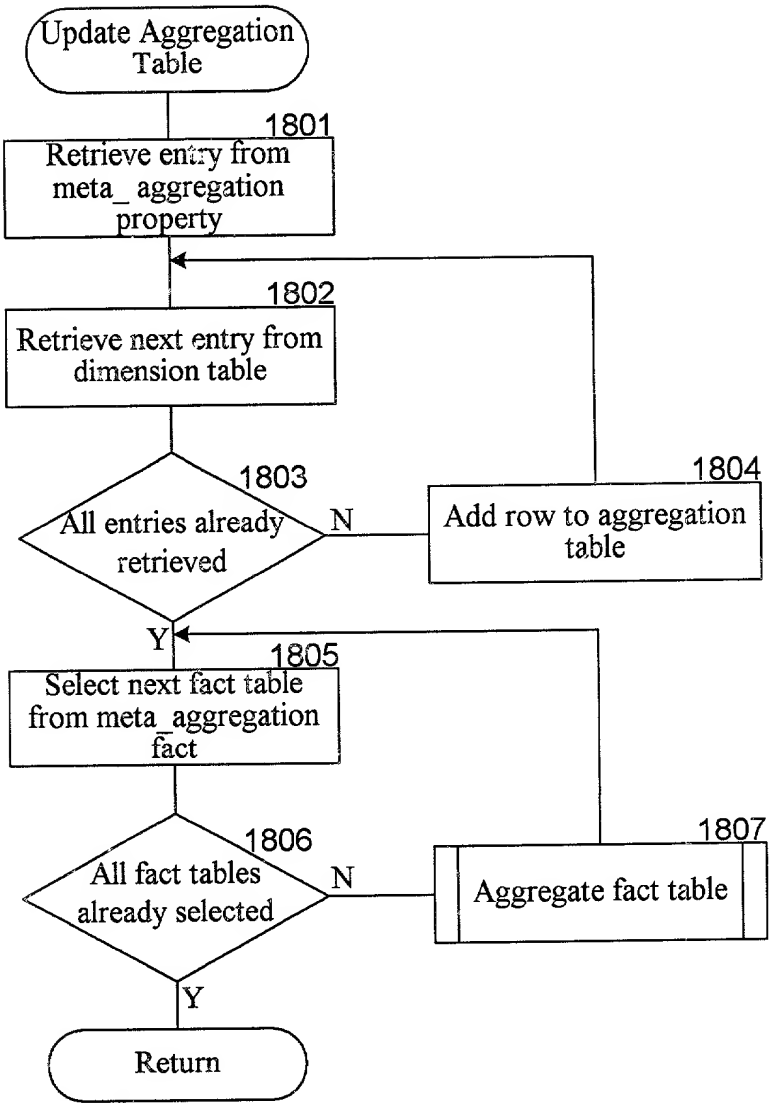
Update Aggregation Table
1801
Retrieve entry from meta_ aggregation property
1802
Retrieve next entry from dimension table
1803
All entries already retrieved
N
1804
Add row to aggregation table
Y
1805
Select next fact table from meta_aggregation fact
1806
All fact tables already selected
N
1807
Aggregate fact table
Y
Return

Fig. 18

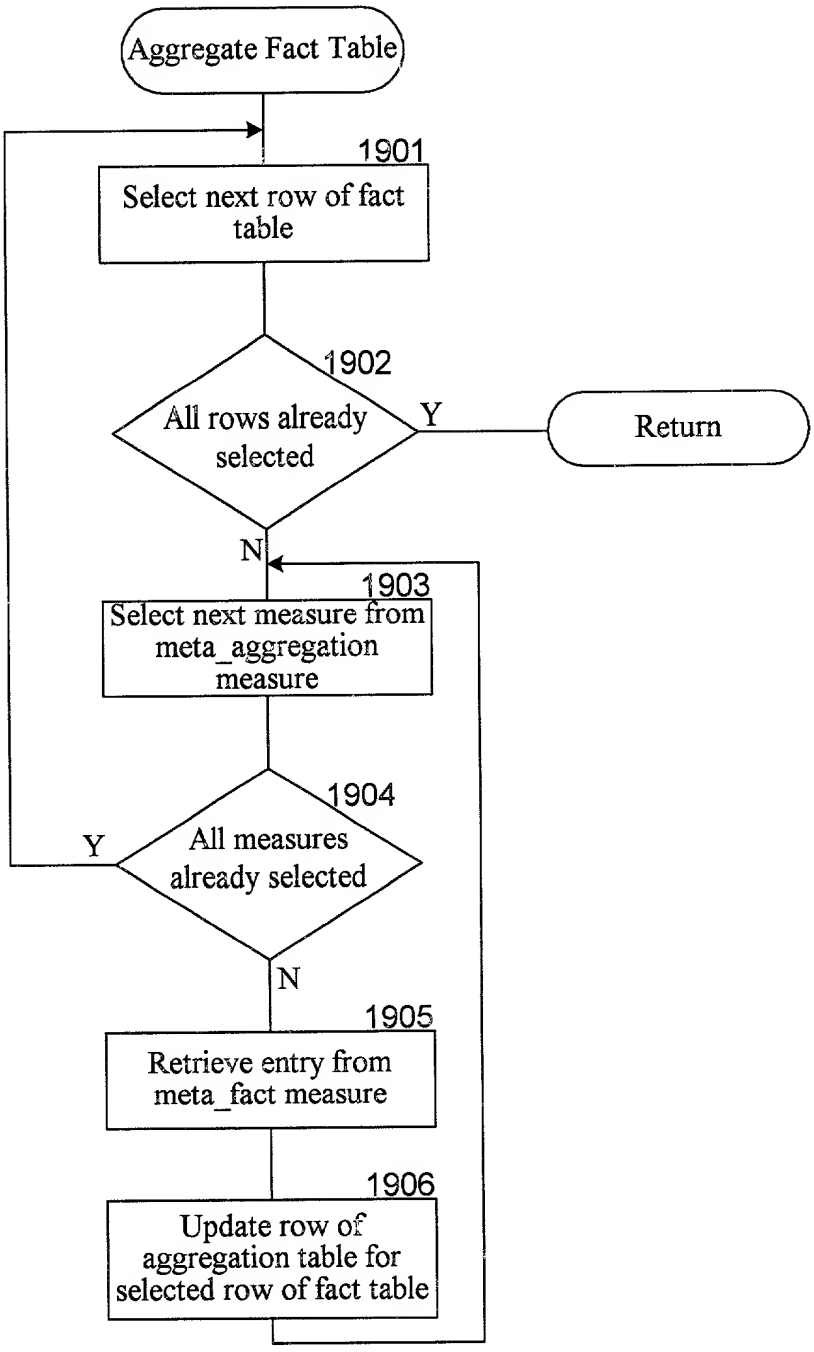
Aggregate Fact Table
1901
Select next row of fact table
1902
All rows already selected
Y
Return
N
1903
Select next measure from meta_aggregation measure
1904
All measures already selected
Y
N
1905
Retrieve entry from meta_fact measure
1906
Update row of aggregation table for selected row of fact table

Fig. 19

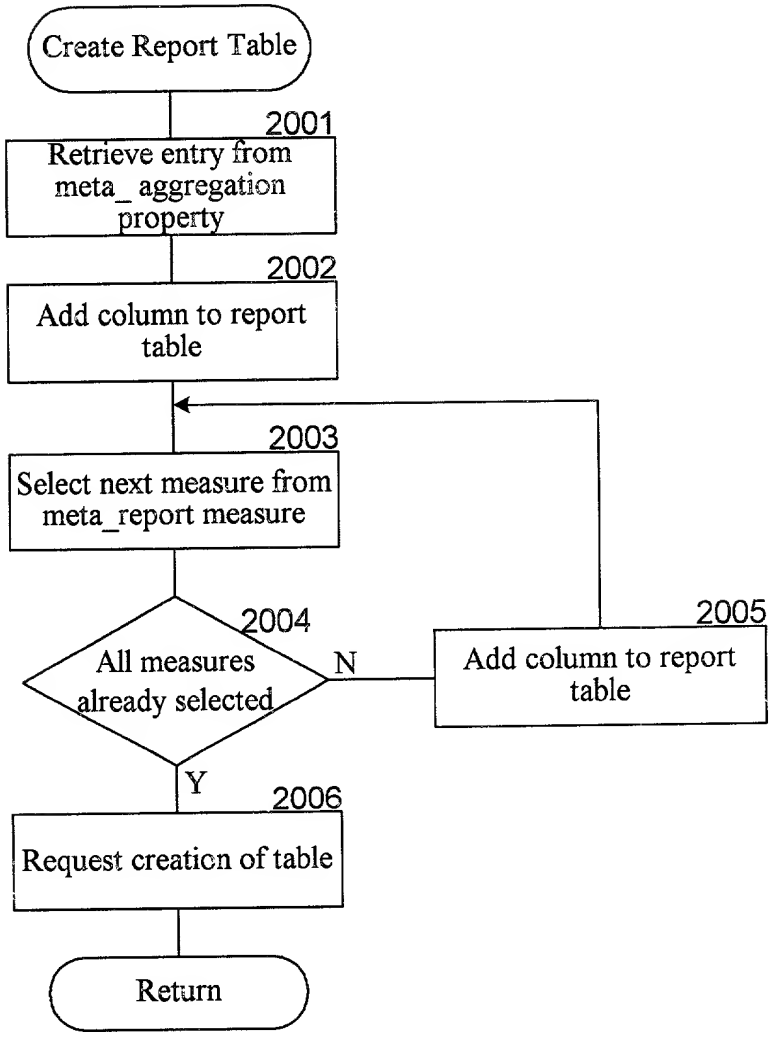
Create Report Table
2001
Retrieve entry from meta_ aggregation property
2002
Add column to report table
2003
Select next measure from meta_report measure
2004
All measures already selected
N
2005
Add column to report table
Y
2006
Request creation of table
Return

Fig. 20

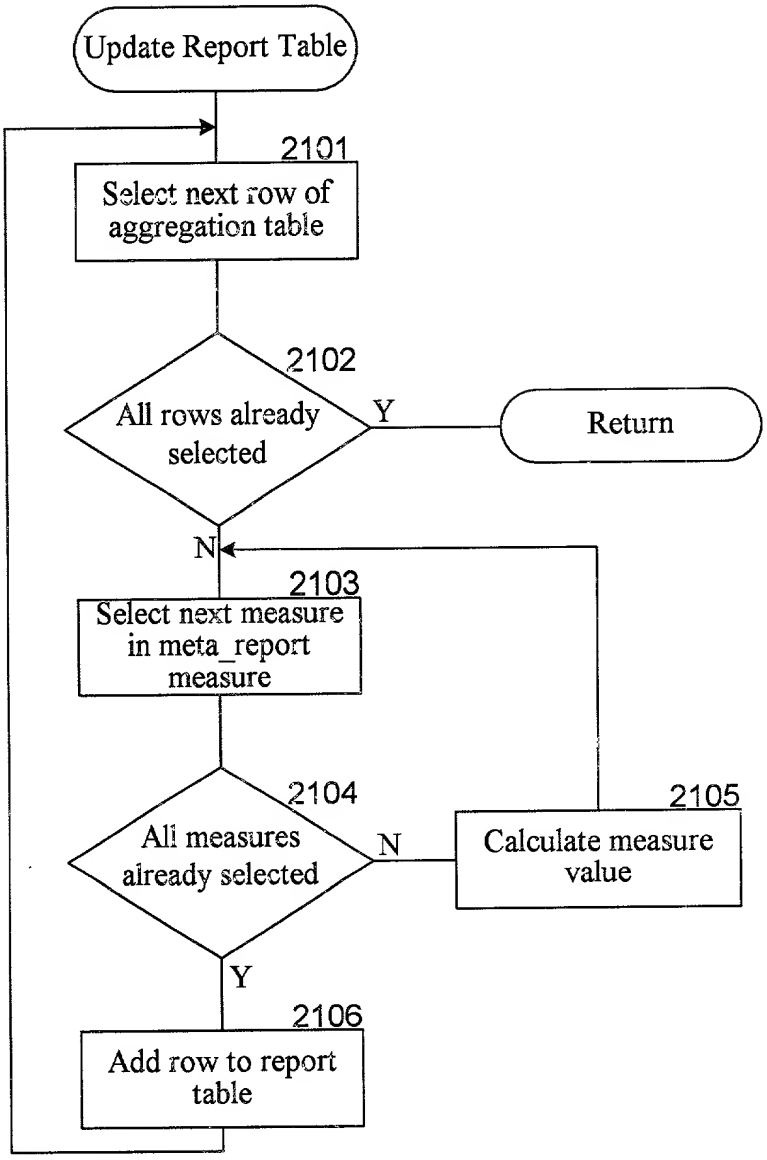
Update Report Table
2101
Select next row of aggregation table
2102
All rows already selected
Y
Return
N
2103
Select next measure in meta_report measure
2104
All measures already selected
N
2105
Calculate measure value
Y
2106
Add row to report table

Fig. 21